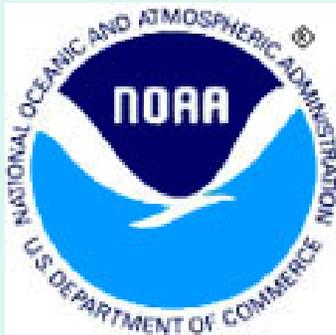




Great Lakes Sea Grant Fisheries Leadership Institute

Evaluation of a Great Lakes Fisheries Leadership Education Program



Rochelle Sturtevant

Great Lakes Sea Grant Network

Brandon Schroeder

Michigan Sea Grant



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GLFLI Vision...



“We envision a Great Lakes Fisheries Leadership Institute operating on a regional, lake and state level capable of providing emerging citizen fishery leaders with the knowledge and skills to effectively interact with Great Lakes fishery management organizations for the benefit of the fishery and its stakeholders.”

(Sturtevant et al. 2002a)

GLFLI Program Goals...

- Condensing the learning curve for fisheries stakeholders
...a crash course in fisheries (Fish, Habitats, and People)!
- Minimizing frustrations on both sides of the agency-stakeholder relationship:
 - Training citizen-leaders in fisheries sciences
 - Explaining complexities of fishery-related institutional arrangements
- Networking among diverse fisheries stakeholders
- Empowering fishery leadership action



Fisheries Science ("Fish" & "Habitats") Objectives

10 Learning Outcomes, reflecting:

- ✓ Fisheries History & Management
- ✓ Fish Biology
- ✓ Great Lakes Ecology
- ✓ Fish Habitat
- ✓ Issues (Fish and Habitat related)
- ✓ Misc. Tools (Fish I.D.)



Leadership (“People”) Objectives



16 Learning Outcomes, reflecting:

- ✓ Networking
- ✓ Understanding Diverse Users
- ✓ Institutional Arrangements
- ✓ Leadership Skills
- ✓ Action/Involvement Abilities (policy, teaching, etc.)
- ✓ Issues (people/user group related)
- ✓ Economic Impacts

Changing Learner Behavior through Environmental Education

(Hungerford and Volk 1990, Hungerford & Peyton 1980)

- Developing natural resources stewardship behaviors is a *complex, lifelong process, involving multiple variables*:
 - **Entry level:** Awareness, positive attitudes, and basic knowledge
 - **Ownership:** In-depth understanding and personal investment
 - **Empowerment:** Comfort, skills, resources necessary to take action
- Environmental behaviors can be categorized into various action “typologies”:
 - ✓ consumer behaviors
 - ✓ persuasion or education activities
 - ✓ ecomanagement or habitat work
 - ✓ political or public participation
 - ✓ legal work

Purpose for Evaluation



The National Sea Grant Program promotes evaluation of programs, based on:

- Program goals and objectives
- Specific standards or measures

(Spranger and Wilkins 2001)

GLFLI program planning proposals state the need and intent to, “assess the effectiveness of [program] delivery”

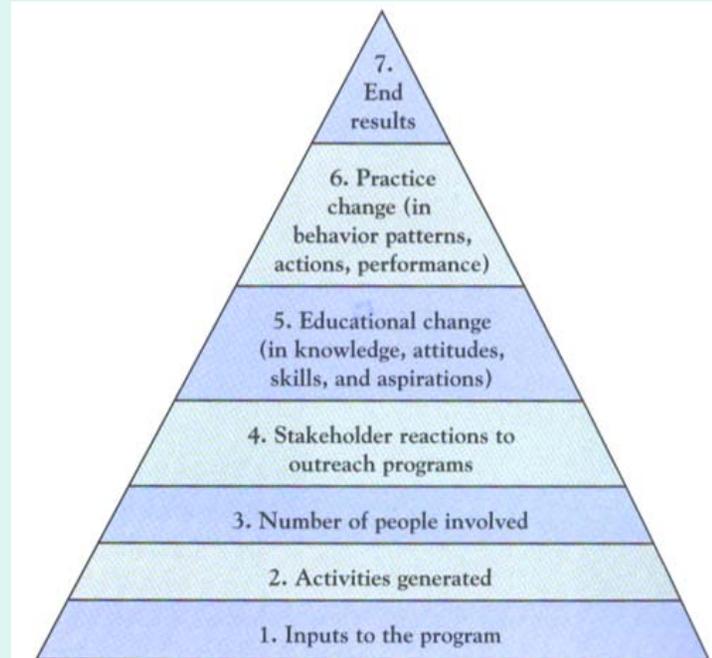
(Sturtevant et al. 2002a)



Bennett's Model for Program Evaluation

(Bennett 1978, Miller et al. 2001)

- Evaluation model adopted by Sea Grant
- Multiple levels/perspectives in program evaluation
- Hierarchical levels of evaluation, including:
 - Program Inputs (resources)
 - Activities
 - Participation
 - Participant Reactions
 - Knowledge, Attitudes, Skills, and Aspirations (KASA)
 - Practices
 - Social, Economic, and Environmental Outcomes



Data Collection Instruments/Sources

- Program Planning Documents
- Participant Applications



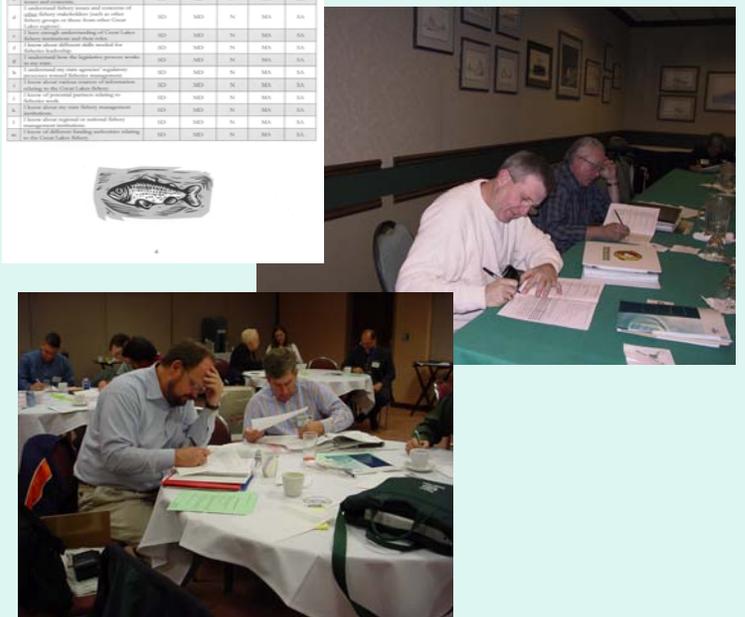
- Pre- and Post-Institute Surveys
(Dillman 1978, 2000)

3. Before participating in the Great Lakes Fisheries Leadership Institute, how would you rate your knowledge of the Great Lakes? (For each of the following questions, please indicate whether you strongly disagree, moderately disagree, neither agree nor disagree, moderately agree, or strongly agree. Check only one response per statement.)

	1 Strongly Disagree	2 Moderately Disagree	3 Neither Agree nor Disagree	4 Moderately Agree	5 Strongly Agree
1. I have a good understanding of the Great Lakes' physical characteristics (e.g., size, depth, water levels, etc.)	50%	30%	15%	5%	1%
2. I know the names of the Great Lakes' major fish species	50%	30%	15%	5%	1%
3. I know the names of the Great Lakes' major fishery products	50%	30%	15%	5%	1%
4. I know the names of the Great Lakes' major fishery-related organizations	50%	30%	15%	5%	1%
5. I know the names of the Great Lakes' major fishery-related issues	50%	30%	15%	5%	1%
6. I know the names of the Great Lakes' major fishery-related people	50%	30%	15%	5%	1%
7. I know the names of the Great Lakes' major fishery-related places	50%	30%	15%	5%	1%
8. I know the names of the Great Lakes' major fishery-related events	50%	30%	15%	5%	1%
9. I know the names of the Great Lakes' major fishery-related organizations	50%	30%	15%	5%	1%
10. I know the names of the Great Lakes' major fishery-related people	50%	30%	15%	5%	1%
11. I know the names of the Great Lakes' major fishery-related places	50%	30%	15%	5%	1%
12. I know the names of the Great Lakes' major fishery-related events	50%	30%	15%	5%	1%

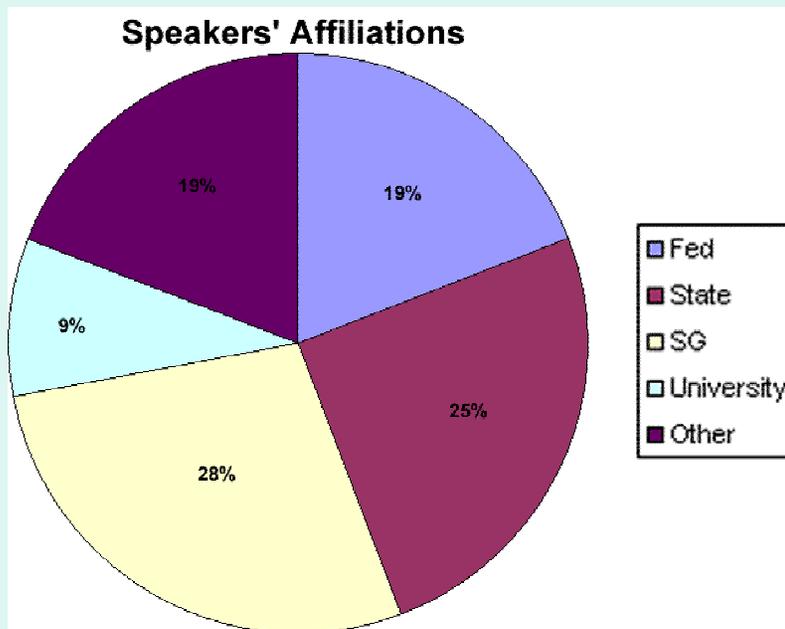


- Participant Writing Activities



Program Resources:

- **GLFLI Curriculum**
 - 8 Core program modules
 - Supplemental resources
- **Diverse Instructors**
 - 68 Total instructional staff

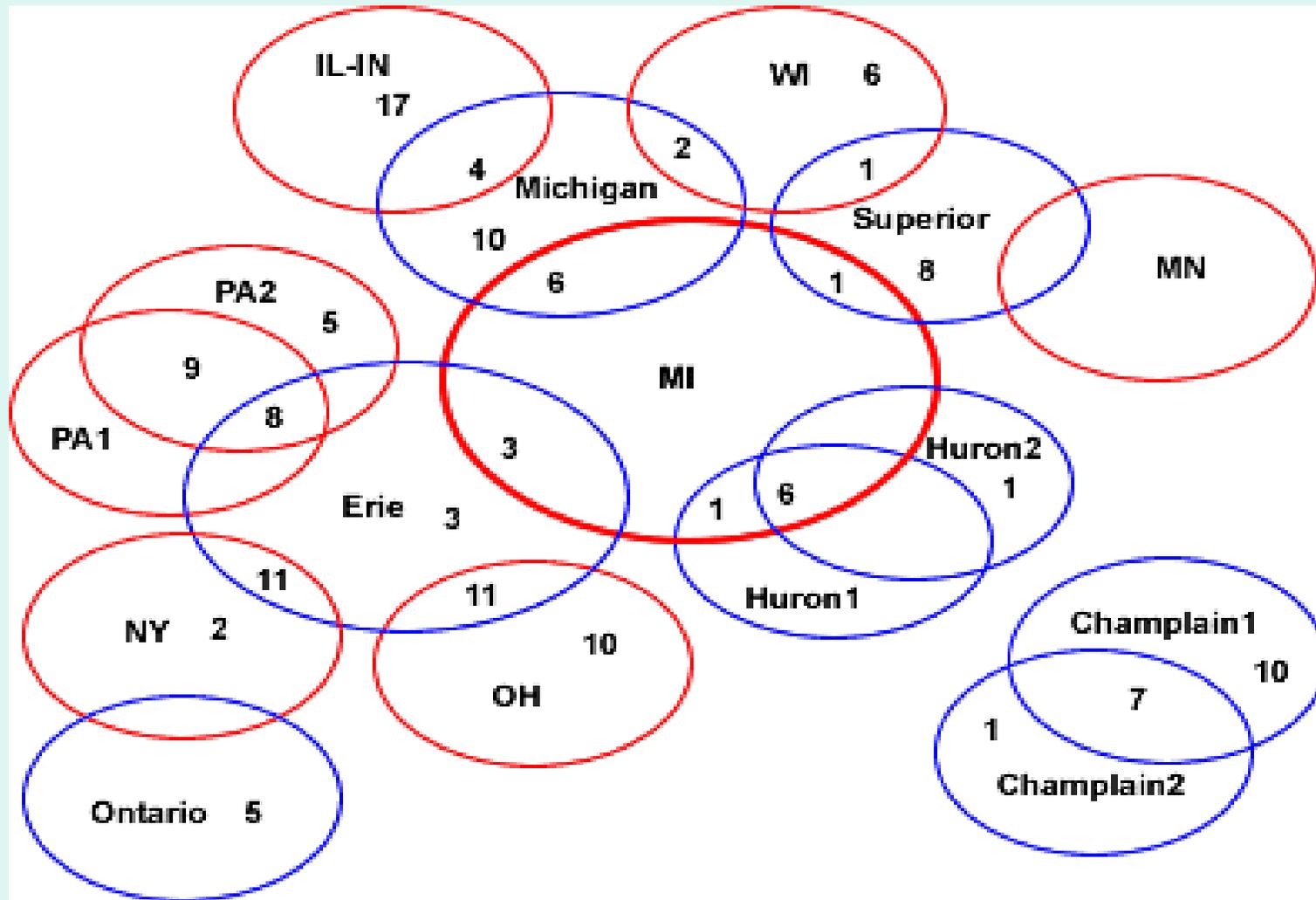


Program Activities:

- 2 Types of Institute sessions:
 - Statewide Sessions
 - Lakewide Sessions
- Curriculum-based Presentations
- Networking Opportunities
- Facilitated Discussions
- Experiential Learning
 - Field Trips
 - Demonstrations

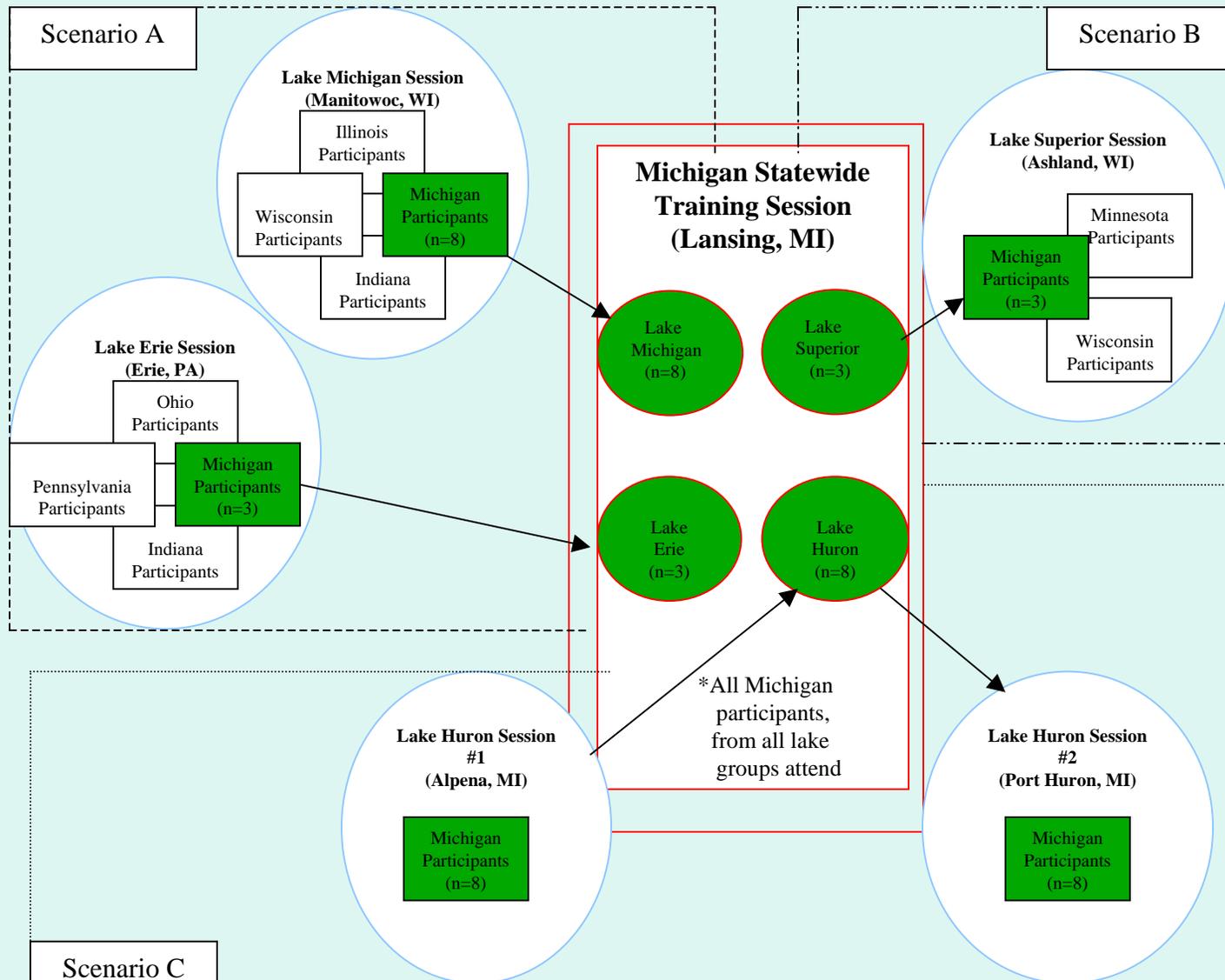


Regional Sessions:



Each circle indicates a GLFLI session (lake sessions in blue and state sessions in red). Numbers indicate participants attending that subset of sessions.

GLFLI: A Michigan Example...

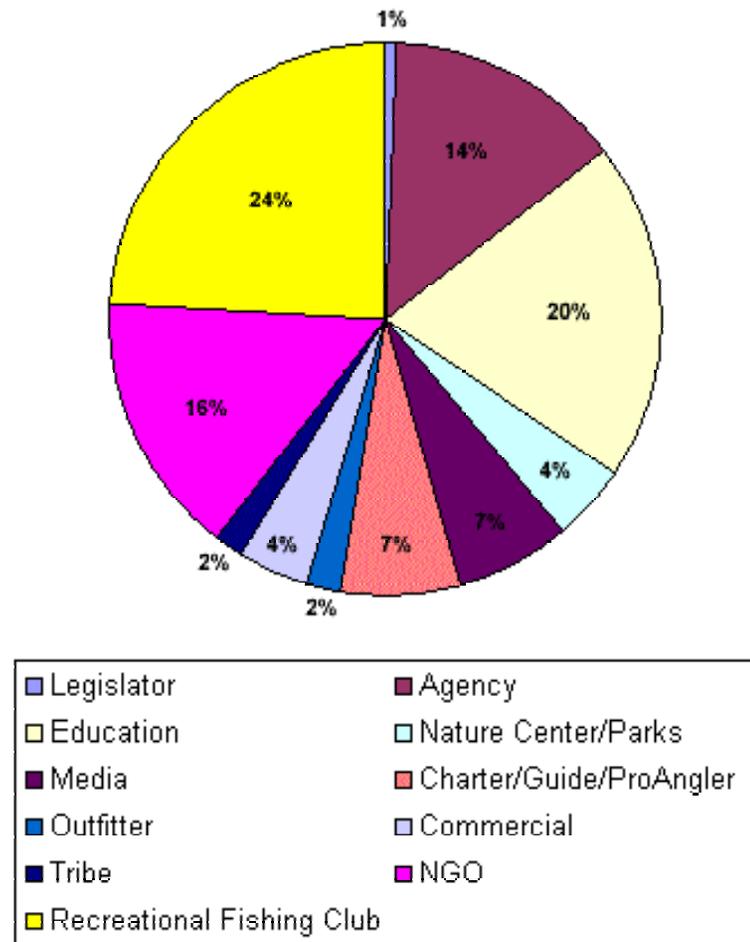


Participation: Region-wide...

- 146 Participants;
- 70 Completing full GLFLI training
- 114 Organizations
- Contact Hours:
 - Range = 3.5 – 60 hours
 - Mean = 32 hours

[based on sessions]

Organizations reached via GLFLI participants



Participation: Michigan Sub-set...

- 4 Lake groups
- 22 Participants
- 43 Organizations represented
- Demographics:
 - Males (86.4%): Females (13.6%)
 - Median Age - 46.5 years
 - Education:
 - High school degree or less (9%)
 - Vocational/trade school or some college (22.7%)
 - College graduate (BS, MS, Ph.D, etc.) (68.2%)



Michigan Participant Reactions:



Learning Expectations:

72.7% - Learned or gained *what had originally hoped*

81.8% - Learned or gained *something new or unanticipated*

Programming Expectations:

77.3% - Curriculum or lessons met expectations (All same)

54.5% - Experiential opportunities met expectations

54.5% - Opportunities to practice knowledge and skills

(Reflects particular sessions)

Overall Reaction to GLFLI:

81.8% - Considered GLFLI experience to be beneficial

Knowledge, Attitudes, Skills, and Aspirations (KASA):

- *Motivations* for stakeholder participation:

- ✓ Primary: (1) Action Skills (education, advocacy)
(2) Knowledge/Understanding (fish science, management)
- ✓ Secondary: (3) Social Factors (networking)

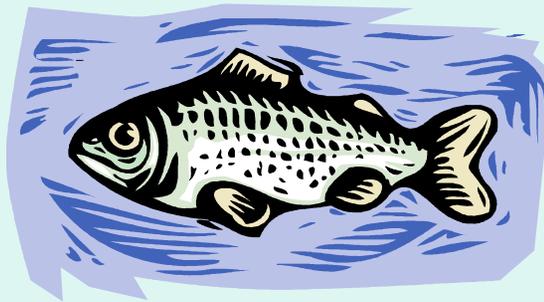


- *Actual Program Outcomes* valued by participants:

- ✓ Primarily: Social (networking)
- ✓ Secondarily: Knowledge/Understanding (fish science, management)
- ✓ Least recognized: Action Skills (education, advocacy)

Knowledge, Attitudes, Skills, and Aspirations (KASA):

- Participants entered with high evaluations of their own knowledge and skills.
- Statistically significant gains for all outcomes, except fish consumption advisories (25 of 26).
 - ** This includes leadership skill areas



Practices:

- Service projects reflected actions relating to:

- (1) Educational (59.1%)
- (2) Habitat work (50%)
- (3) Policy/legislative (36.4%)

[63.6% indicated multiple “types”]



- Application of participant learning most likely within:

- (1) Local geographic community (68.2%)
- (2) Specific fisheries organization (50%)

- Statewide, lakewide, basin-wide activities also likely (but not as priorities)
- GLFLI positively influenced attitudes, but generated NO statistical significant changes in:
 - ✓ types of service projects
 - ✓ intended “community” of work**

(**were statistically more likely to carry out Lakewide activities than prior to GLFLI)

** Future evaluation necessary to understand ACTUAL participant use/practice

Social, Economic, and Environmental Outcomes:



Program Goal:

Changes in participants' fisheries leadership activities

Intended GLFLI benefits or “outcomes” to be realized:

- through service projects conducted
- increased involvement in agency advisory groups
- to the fishery and fishery stakeholders

**basis for future mid- and long-term program evaluation

Conclusion: Lessons learned...

Programming:

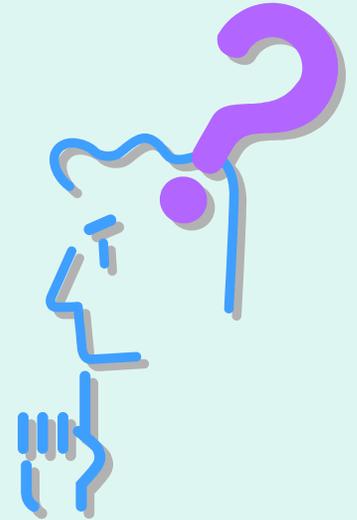
- Significant investment of resources
- Likely high return on investment for those completing course
- High drop-out rates; recruit accordingly

Participant Involvement:

- Diverse participants with diverse fisheries education and experience
- Pre-determined leadership activities (service projects, communities of work)
- Role for GLFLI: Guiding stakeholder action through understanding of needs and intentions

Program Values and Opportunity:

- Primary value of the GLFLI as a network-building tool
- Successful in building awareness, knowledge, and understanding
- Opportunity to further develop skill sets among participants



Acknowledgements

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- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Great Lakes Environmental Research Laboratory
- State Departments of Natural Resources and Environmental Protection Agencies

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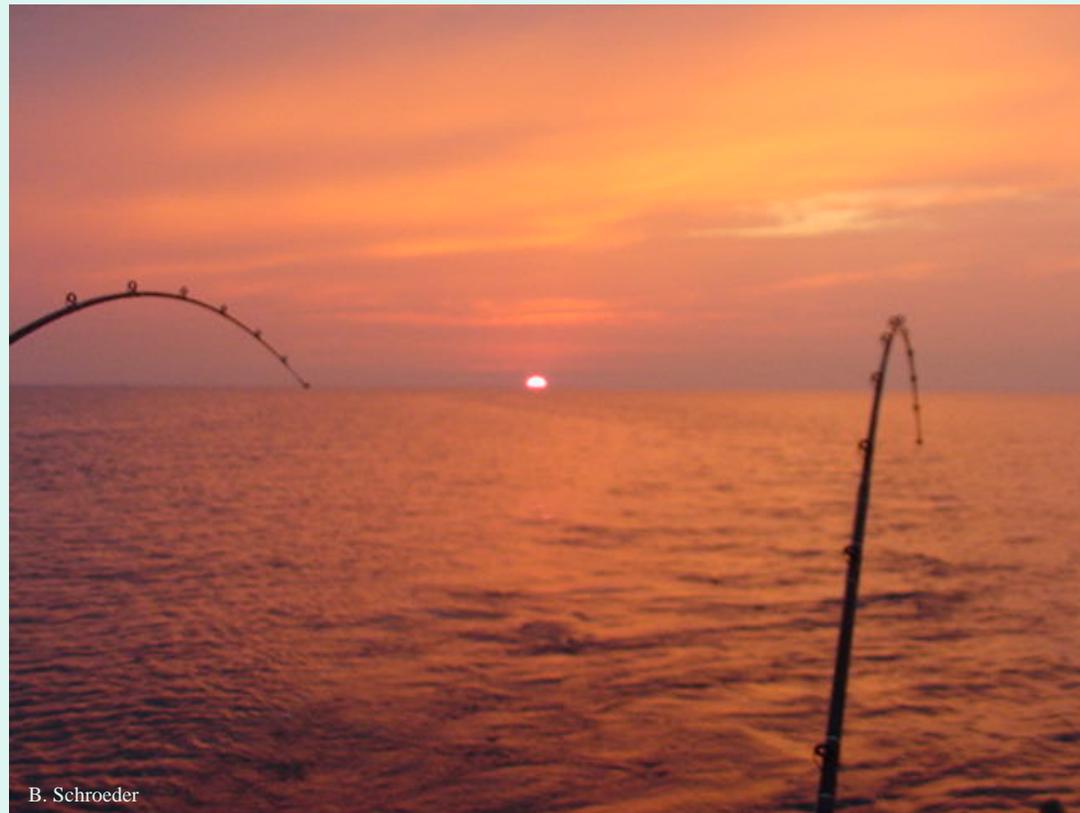
❖ Michigan Sea Grant Program and Staff

❖ Michigan GLFLI Participants

...among many others!!

Thank you for your Time!

...Questions??



B. Schroeder

